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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,786	10/24/2003	Guo-Xin Jin	2002B181B	2340
23455	7590	12/05/2005	EXAMINER	
EXXONMOBIL CHEMICAL COMPANY 5200 BAYWAY DRIVE P.O. BOX 2149 BAYTOWN, TX 77522-2149			PASTERCZYK, JAMES W	
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/693,786

Applicant(s)

JIN ET AL.

Examiner

J. Pasterczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 17-19, 21 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-22 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/14/04</u> . | 6) <input type="checkbox"/> Other: _____  |

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-16 and 20, drawn to a copolymer of an olefin and a metallocene having an olefinic side group, classified in class 502, subclass 159.
- II. Claims 17-19, drawn to a metallocene catalyst, classified in class 502, subclass 103.
- III. Claims 21 and 22, drawn to an olefin polymerization process, classified in class 526, subclass various depending on the catalyst and cocatalyst used.

2. The inventions are distinct, each from the other because:

Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as a structural material, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Inventions II and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product

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as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product, such as a homogeneous solution catalyst.

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to serve as a structural material, the latter to polymerize olefins.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Catherine Bell, Esq., on 4/19/05, a provisional election was made with traverse to prosecute the invention of group I, claims 1-16 and 20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 17-19, 21 and 22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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6. The abstract of the disclosure is objected to because it is drawn only to one embodiment of the present invention, namely that using styrene as the olefin and metallocenes with aryl groups, though cyclopentadienyl ligands are not quite the same as aryl groups. Correction is required. See MPEP § 608.01(b).

7. Claims 1-16 and 20 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the metal of the metallocene being a group 4 metal, does not reasonably provide enablement for said metal to be any other metal. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. Chemistry is a notoriously unpredictable art, and catalysis even moreso. However, it is known that group 3 metals have a maximum oxidation state of 4+ in ordinary conditions, hence how one of ordinary skill in the art would make, let alone use, a group 3 metallocene having a 4+ oxidation state as the current claims require is at best problematic. Likewise, it is known that late transition metals are electron rich and hence less likely to form compounds with pi basic ligands, as metallocenes are and as group 14-16 main group elements are, and that finding such metals in elevated oxidation states such as 4+ as currently required is a rare event. The present specification only gives working examples for group 4 metals. Hence one of ordinary skill in the art would not be enabled to make, let alone use, the composition of the present claims.

8. Claims 1-16 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1 it is not clear why two different symbols are required for something that may be the same metals. In (b) change "connected" to --bonded--, a

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more accurate chemical term. This should also be done in (ii). In this clause on (ii), it is not clearly recited that the J variable found here is the same as or different from that of the third structural formula; if J (or any other symbol for that matter) is meant to be a universal variable, it should be given only one definition throughout the specification and claims, and should be used to refer to only one entity. In (e) the symbol D normally means deuterium, and the symbol E normally means non-metallic main group element. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). In the fourth line from the end delete “selected from” since this is only part of a conventionally recognized introductory phrase to a closed Markush group. It is not clear that the full range of metals recited for M and M<sub>1</sub> is intended.

In claims 2, 3, and 20 part (b), delete “selected from” for the same reason given above.

Further in claim 3, correct the subscripts on the carbon atoms.

In claim 4, change “groups” to --group-- and insert --a-- before “phenyl”.

Claims 5 and 6 have the same problem with the definitions of the metals as claim 1.

In claims 7-10 insert --said-- after “wherein”. In claim 7 also delete “the” and the last comma.

In claim 11 insert --said-- after “at least one”.

In claims 14-16 insert --the group consisting of-- after “selected from”.

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In claim 20 each structure has the symbol TM in it. As well as being the same as the symbol for a trademarked good, it can also be read as a combination of the individual symbols T and M, both of which are found in claim 1 from which this claim depends. It is urged that a less ambiguous symbol be selected. In (a) it is not clear that X is the same as D or E; the recitation of (b) is identical to that of claim 1 and hence fails to further limit it; in (c) recitation of a group 11 metal is inconsistent with group 1 and hence lacks antecedent basis; in (d) n must be an integer; in (e) Pn is normally the symbol for a pnictogen, yet only the group 15 elements are pnictogens, thus use of a different symbol here is urged.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-16 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Antberg et al., USP 5,169,818 (hereafter referred to as Antberg).

Antberg discloses the invention as claimed (col. 1, l. 63 to col. 6, l. 35).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Pasterczyk

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11/28/05



J.A. LORENGO  
SUPERVISORY PATENT EXAMINER